

**WARNING: DEVIATION FROM THESE INSTALLATION INSTRUCTIONS MAY LEAD TO IMPROPER ENGINE OPERATION WHICH COULD CAUSE PERSONAL INJURY TO OPERATORS OR OTHER NEARBY PERSONNEL.**

## **1.0 DESCRIPTION**

- 1.1 The Altronic 24VDC alternator/regulator packages provide a reliable, engine-mounted source of DC power for Altronic DC-powered digital ignition systems, other Altronic engine accessories and Altronic Controls panels. There are two versions available.
- VERSION I** - The 590110 series (coupling driven) or 590116 series (belt driven) provide up to 70 watts (3 amps) output at 1,800 RPM.
- VERSION II** - The 590111 series (coupling driven) or 590117 series (belt driven) provide direct power for the Altronic CD1, CPU-90 and DISN ignition system thus constituting a self-powered, digital ignition system.
- 1.2 The following components are required:
1. Alternator Unit
  2. Regulator (581501 or 581502)
  3. Cable Assembly
  4. Battery Pack (591100) - used only with Version I series alternators

## **2.0 ALTERNATOR UNIT**

- 2.1 **COUPLING DRIVEN UNIT:** The alternator is available with several flange assemblies to facilitate mounting to most engines having a flange magneto drive. The alternator should be secured to the mounting using 3/8"-16 screws; tighten the screws securely.
- 2.2 **BELT DRIVEN UNIT:** The alternator must be driven with a pulley having an adjustable 5/8" I.D. hub. Use a pulley diameter to achieve a speed necessary to satisfy the output requirements of the application - refer to the chart on drawing 509 059A (Version I) or 509 060A (Version II). The alternator should be secured to a mounting bracket using two 3/8"-16 screws; tighten the screws securely.
- 2.3 The maximum recommended continuous operating RPM for the alternator drive shaft is 2,000 RPM.

## **3.0 REGULATOR**

- 3.1 Be sure the regulator is the correct model for the alternator being used; the regulator part no. must match that printed on the alternator label.
- 3.2 Locate a suitable mounting position for the regulator unit within reach of the cable assembly and where the ambient temperature does not exceed 150° F. (65° C.).
- 3.3 Secure the regulator with four 1/4" screws.

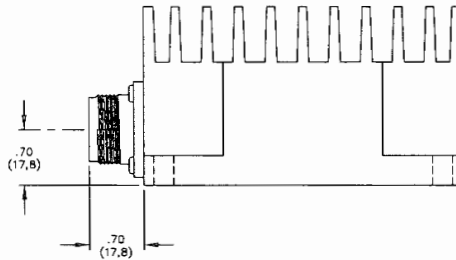
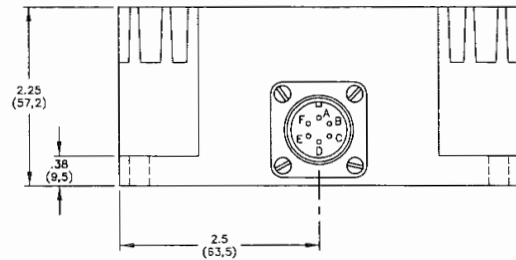
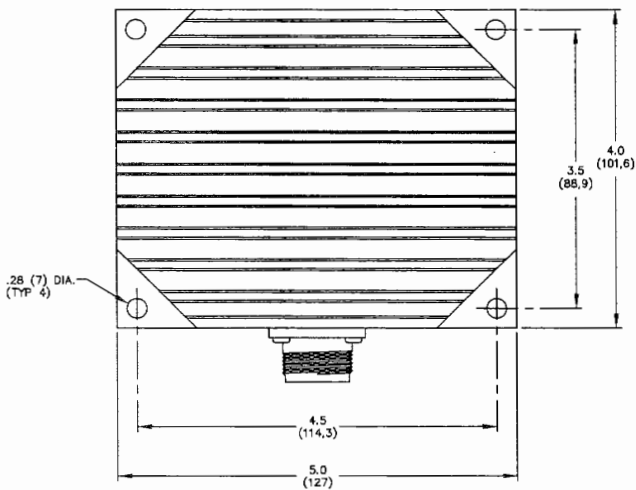
## **4.0 BATTERY PACK** (used only with Version I series alternator and 581501 regulator)

- 4.1 Locate a suitable mounting position for the battery pack unit within reach of the cable assembly and where the ambient temperature does not exceed 122° F. (50° C.).
- 4.2 The battery pack is furnished with shock mounts and 1/4" mounting hardware. Tighten all four nuts securely.

## **5.0 WIRING HOOK-UP**

- 5.1 Refer to the drawings for mounting dimensions for the various system components:
- For alternator dimensions, see drawing 509 056A.
  - For regulator dimensions, see drawing 509 057A.
  - For battery pack dimensions, see drawing 509 058.
- 5.2 Refer to the diagrams for the proper wiring hook-up for the particular alternator/regulator version being used:
- For the Version I system, see drawing 509 059A or 509 063A (shielded system).
  - For the Version II system, see drawing 509 060A or 509 064A (shielded system).





REGULATOR PART NO.	ALTERNATOR PART NO.	BATTERY PACK	REGULATED VOLTAGE	APPLICATION
581501	590110-x	591100	27 ±10%	BATTERY CHARGING - SEE NOTE 1
	590116-x			
581502	590111-x	NOT USED	27 ±10%	IGNITION POWER - SEE NOTE 2
	590117-x			

NOTE:

- MUST BE USED WITH A BATTERY BACK-UP:
  - ALTRONIC BATTERY PACK 591100; OR
  - TWO BATTERIES POWER SONIC MODEL PS-1242 OR EQUIVALENT 12V, 4.0 AMP-HR., WIRED IN SERIES
- POWER FOR ALTRONIC CD1, CPU-90, DISN SYSTEMS ONLY.

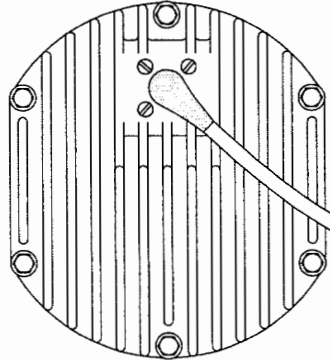
NOTE: REGULATOR SHOULD BE MOUNTED IN A LOCATION WHERE MAXIMUM AMBIENT TEMPERATURE DOES NOT EXCEED 150°F.

DIMENSIONS IN INCHES AND (MM).

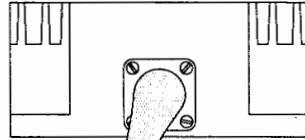
REVISIONS				TOLERANCES (EXCEPT AS LISTED)	ALTRONIC INC.	
NO.	DATE	BY	DESCRIPTION	DECIMAL .0005 - ±.005 .001 - ±.010	TITLE VOLTAGE REGULATOR INSTALLATION DRAWING	
1				FRACTIONAL	DRAWN BY	WTP
2					SCALE	FULL
3					DATE	2-1-01
4					DRAWING NUMBER	509 057A
5					APPROVED BY	



590110-x  
590116-x  
ALTERNATOR



581501  
VOLTAGE REGULATOR



593060-x  
CABLE

6-PIN CONNECTOR

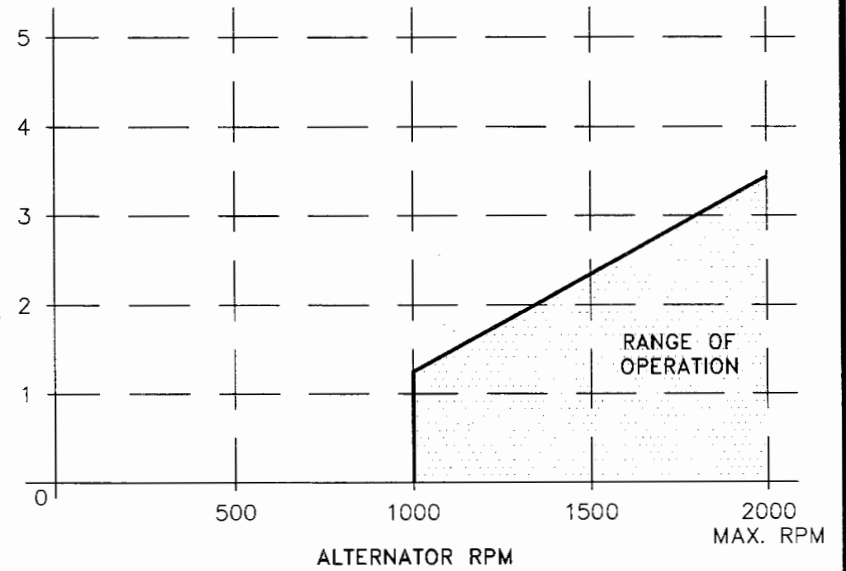
- A - +24 VOLT OUTPUT
- B - GROUND
- C - + BATTERY
- D - NOT USED
- E - ALT. INPUT
- F - ALT. INPUT

AMPS  
⊙ 24VDC

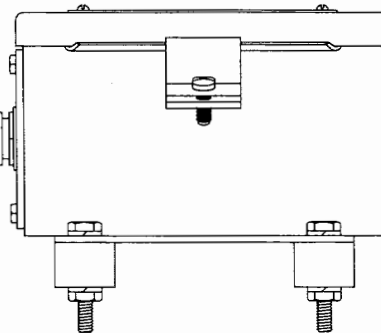
3-PIN CONNECTOR

- A - ALT. OUT
- B - ALT. OUT
- C - NOT USED

VERSION I



591100  
BATTERY PACK



FUSE (2) RATING:  
10 AMPS

BATTERY +  
BATTERY -

GROUND

24 VDC POWER  
TO ALTRONIC IGNITION  
AND CONTROLS

TOLERANCES (EXCEPT AS NOTED)	ALTRONIC INC.		
DECIMAL .XXX - ±.005 .XX - ±.010	TITLE 24 VDC SYSTEM - VERSION I INSTALLATION DRAWING		
FRACTIONAL	DRAWN BY WTP	SCALE NONE	DRAWING NUMBER
MATERIAL	CHECKED BY	DATE 2-1-01	509 059A
APPROVED BY			

REVISIONS			
NO.	DATE	BY	DESCRIPTION
1			

590111-x  
590117-x  
ALTERNATOR

581502  
VOLTAGE REGULATOR

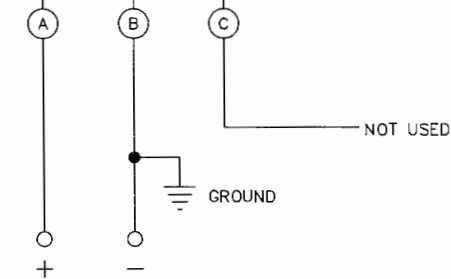
593060-x  
CABLE

6-PIN CONNECTOR

- A - +24 VOLT OUTPUT
- B - GROUND
- C - NOT USED
- D - NOT USED
- E - ALT. INPUT
- F - ALT. INPUT

3-PIN CONNECTOR

- A - ALT. OUT
- B - ALT. OUT
- C - NOT USED



24 VDC POWER TO  
ALTRONIC CPU-90,  
DISN IGNITION

## VERSION II

APPLICATION: CD1, CPU-90, DISN

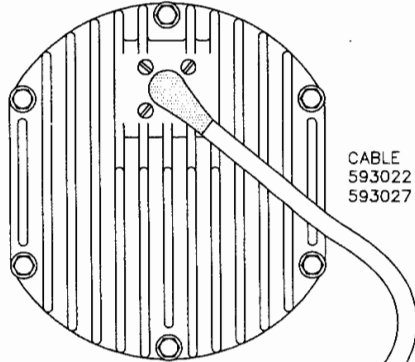
NO. CYLINDERS	CYCLE	MIN. ALTERNATOR DRIVE RATIO *	ENGINE RPM	
			MIN.	MAX.
4 OR LESS	2	1:1	60	1,800
8 OR LESS	2	2:1	30	900
10 OR LESS	2	2.5:1	25	750
16 OR LESS	2	3:1	25	600
8 OR LESS	4	1:1	60	1,800
10 OR LESS	4	1.25:1	50	1,500
16 OR LESS	4	1.5:1	50	1,200

\* ALTERNATOR RPM : ENGINE RPM. RATIO LISTED IS MINIMUM TO ACHIEVE PROPER OPERATION OF CD1, DISN AND CPU-90 MODEL -100; CONTACT FACTORY FOR CPU-90 MODELS -150 AND -200.

TOLERANCES (EXCEPT AS NOTED)		ALTRONIC INC.			
DECIMAL .XXX - ±.005 .XX - ±.010		TITLE 24 VDC SYSTEM - VERSION II INSTALLATION DRAWING			
FRACTIONAL		DRAWN BY	WTP	SCALE	NONE
MATERIAL		CHECKED BY	DATE	2-13-01	DRAWING NUMBER
		APPROVED BY			509 060A

REVISIONS				
NO.	DATE	BY	DESCRIPTION	
1				
2				

590110-x  
590116-x  
ALTERNATOR

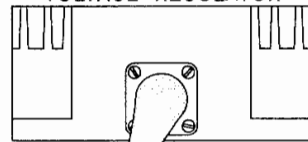


CABLE  
593022  
593027

3-PIN CONNECTOR

- A - ALT. OUT
- B - ALT. OUT
- C - NOT USED

581501  
VOLTAGE REGULATOR

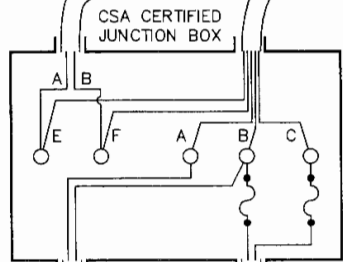


CABLE  
593058

6-PIN CONNECTOR

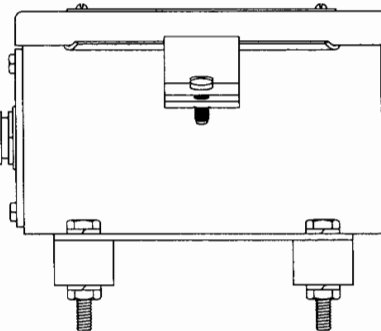
- A - +24 VOLT OUTPUT
- B - GROUND
- C - + BATTERY
- D - NOT USED
- E - ALT. INPUT
- F - ALT. INPUT

AMPS  
⊙ 24VDC



FUSE (2) RATING:  
10 AMPS

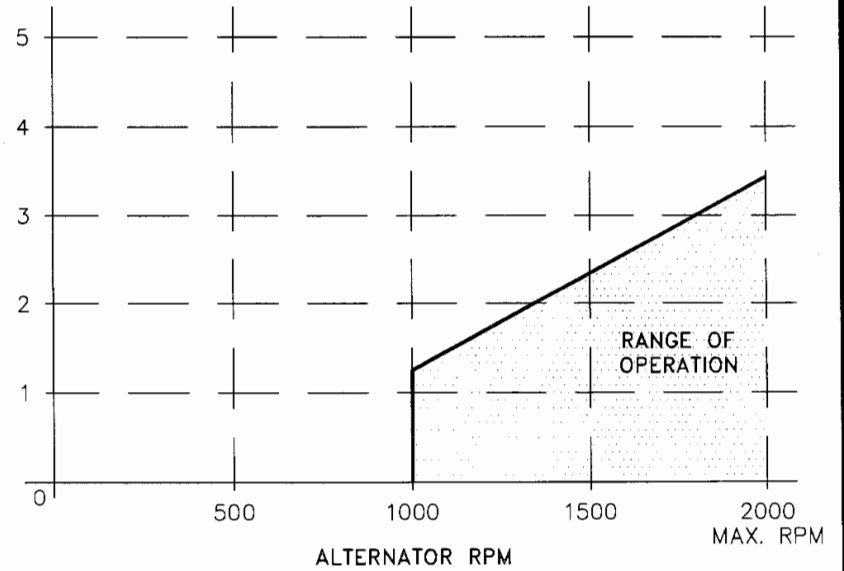
591100  
BATTERY PACK



CSA CERTIFIED  
CONDUIT

TO IGNITION CONTROLS  
30 VDC MAX.  
4 AMPS MAX.

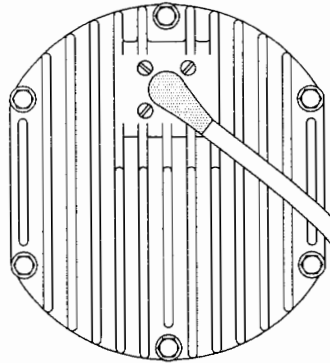
VERSION I



TOLERANCES (EXCEPT AS NOTED)		ALTRONIC INC.		
DECIMAL .XXX - ±.005 .XX - ±.010		TITLE 24 VDC SHIELDED SYSTEM - VERSION I INSTALLATION DRAWING		
FRACTIONAL	DRAWN BY	WTP	SCALE NONE	DRAWING NUMBER
MATERIAL	CHECKED BY	DATE	2-1-01	509 063A
	APPROVED BY			

REVISIONS				
NO.	DATE	BY	DESCRIPTION	
1				

590111-x  
590117-x  
ALTERNATOR

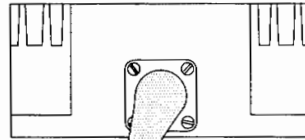


3-PIN CONNECTOR

A - ALT. OUT  
B - ALT. OUT  
C - NOT USED

CABLE  
593022  
593027

581502  
VOLTAGE REGULATOR

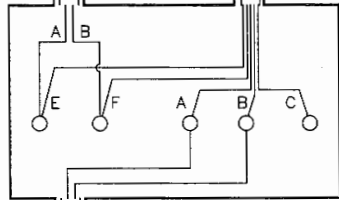


CABLE  
593058

6-PIN CONNECTOR

A - +24 VOLT OUTPUT  
B - GROUND  
C - NOT USED  
D - NOT USED  
E - ALT. INPUT  
F - ALT. INPUT

CSA CERTIFIED  
JUNCTION BOX



CSA CERTIFIED  
CONDUIT

TO IGNITION CONTROLS  
30 VDC MAX.  
4 AMPS MAX.

## VERSION II

APPLICATION: CD1, CPU-90, DISN

NO. CYLINDERS	CYCLE	MIN. ALTERNATOR DRIVE RATIO *	ENGINE RPM	
			MIN.	MAX.
4 OR LESS	2	1:1	60	1,800
8 OR LESS	2	2:1	30	900
10 OR LESS	2	2.5:1	25	750
16 OR LESS	2	3:1	25	600
8 OR LESS	4	1:1	60	1,800
10 OR LESS	4	1.25:1	50	1,500
16 OR LESS	4	1.5:1	50	1,200

\* ALTERNATOR RPM : ENGINE RPM. RATIO LISTED IS MINIMUM TO ACHIEVE PROPER OPERATION OF CD1, DISN AND CPU-90 MODEL -100; CONTACT FACTORY FOR CPU-90 MODELS -150 AND -200.

TOLERANCES (EXCEPT AS NOTED)		ALTRONIC INC.			
DECIMAL .XXX - ±.005 .XX - ±.010	FRACTIONAL	TITLE 24 VDC SHIELDED SYSTEM - VERSION II INSTALLATION DRAWING			
MATERIAL	DRAWN BY WTP	SCALE NONE	DRAWING NUMBER		
	CHECKED BY	DATE 2-13-01	509 064A		
	APPROVED BY				

REVISIONS				
NO.	DATE	BY	DESCRIPTION	
1				
2				